

# Introduction to Functions HW 12 (2.6)

I will be able to use special functions.

30

Key

Name

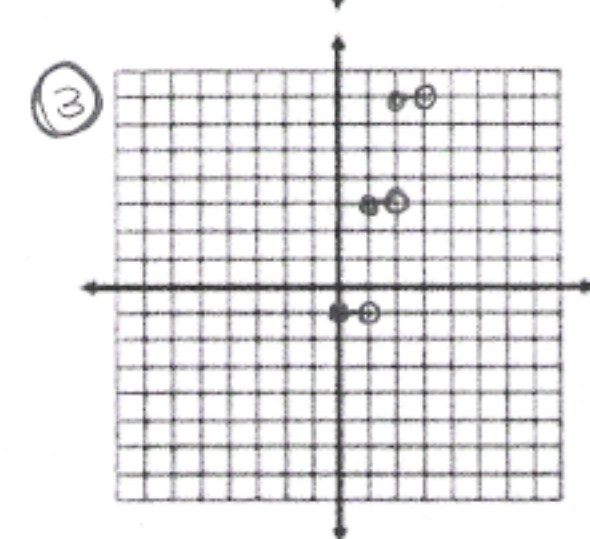
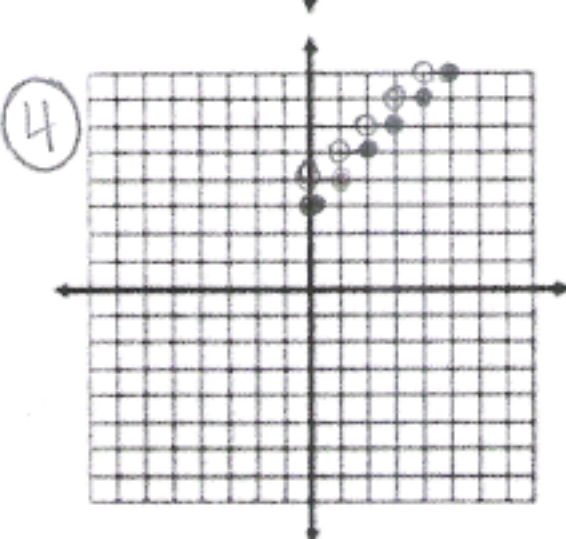
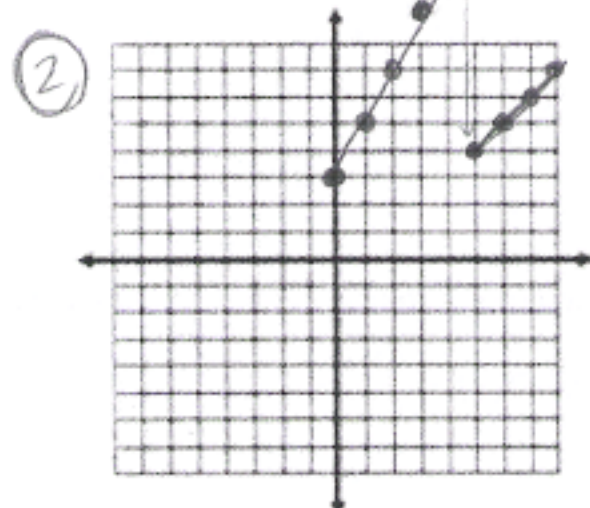
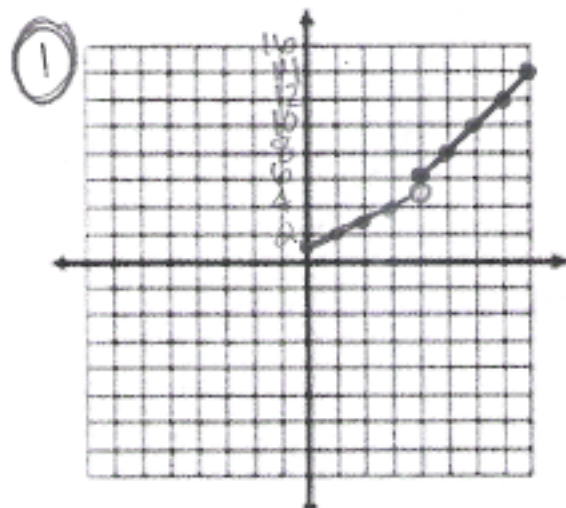
Graph each function.

1.)  $f(x) = \begin{cases} x+1 & \text{if } 0 \leq x < 5 \\ 2x-4 & \text{if } 5 \leq x < 10 \end{cases}$   
 $2(5)-4$   
 $6$

2.)  $k(x) = \begin{cases} 2x+3 & \text{if } 0 \leq x < 5 \\ x-1 & \text{if } 5 \leq x < 10 \end{cases}$   
 $(5, 4)$

3.)  $f(x) = 4 \lfloor x \rfloor - 1$   
 $4x-1$

4.)  $g(x) = \lceil x \rceil + 3$   
 $x+3$



Evaluate each expression.

35.)  $\lceil 3.9 \rceil$  3

6.)  $\lceil 3.9 \rceil$  4

7.)  $\lceil -4.1 \rceil - \lceil -3.25 \rceil$   
 $-5 + (+4) = -1$

8.)  $\lceil -5.1 \rceil - \lceil 5.1 \rceil$   
 $-5 - 6 = -11$

9.)  $\lceil 2.75 \rceil - \lceil 2.75 \rceil$   
 $3 - 2 = 1$

10.)  $\lceil 3 \rceil + \lceil -4 \rceil$   
 $3 + 4 = 7$

11.)  $\lceil -1 \rceil - \lceil 3 \rceil$   
 $1 - 3 = -2$

12.)  $\lceil -1 \rceil - \lceil 1 \rceil$   
 $-1 - 1 = -2$

13.) A gourmet coffee store sells the house blend of beans at \$9.89/ pound for quantities up to and including 5 pounds. For each additional pound, the price is \$7.98.

a.) Write a piecewise function to represent the cost based on the number of pounds of coffee beans you purchase.

$$C(x) = \begin{cases} 9.89x & 0 \leq x \leq 5 \\ 7.98x & x > 5 \end{cases}$$

b.) Find the cost for 5.5 pounds of coffee beans.

$$7.98(5.5) = \$43.98$$